

**Appendix A: marked up version showing the changes made in the specification**

***In the Specification:***

A polypeptide was predicted to be encoded by SEQ ID NO: 2 as set forth below. The polypeptide was predicted using a software program called FASTY (available from the Internet website at: fasta.bioch.virginia.edu [<http://fasta.bioch.virginia.edu>] ) which selects a polypeptide based on a comparison of translated novel polynucleotide to known polypeptides (W.R. Pearson, Methods in Enzymology, 183: 63-98 (1990), herein incorporated by reference).

**Appendix C – Clustal W Analysis**

# Appendix C-Clustal W

Alignment Report of Align\_Carboxypeptidase.meg ClustalW (Slow/Accurate, Gonnet)

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1  - - - - - M K P L L E T L Y L L 00002227Fa161_aa1
1  - - - - - 21489916_CPO
1  - - M L A F L I L V T V T L A S A H H S CAB46991
1  M K L H G L G I L V A I I L Y E Q H - - gi7416967_Mouse_TAFI
1  M K L H G L G I L V A I I L Y E Q H - - BAB03402_Mouse

12  G M L V P G G - - - - - L 00002227Fa161_aa1
1  - - - - - 21489916_CPO
19  G E H F E G E K V F R V N V E D E N D I CAB46991
19  G F A F Q S G Q V L S A L P R T S R Q V gi7416967_Mouse_TAFI
19  G F A F Q S G Q V L S A L P R T S R Q V BAB03402_Mouse

20  G Y D R S L A Q H R Q E I V D K S V S P 00002227Fa161_aa1
1  - - - - S L A Q H R Q E I V D K S V S P 21489916_CPO
39  S L L H E L A S T R Q I D F W K P D S V CAB46991
39  Q L L Q N L T T T Y E V V L W Q P V T A gi7416967_Mouse_TAFI
39  Q L L Q N L T T T Y E V V L W Q P V T A BAB03402_Mouse

40  W S L E T Y S - - - - - 00002227Fa161_aa1
17  W S L E T Y S - - - - - 21489916_CPO
59  T Q I K P H S T V D F R V K A E D I L A CAB46991
59  E F I E K K K E V H F F V N A S D V D S gi7416967_Mouse_TAFI
59  E F I E K K K E V H F F V N A S D V D S BAB03402_Mouse

47  - - - - - 00002227Fa161_aa1
24  - - - - - 21489916_CPO
79  V E D F L E Q N E L Q Y E V L I N N L R CAB46991
79  V K A H L N V S R I P F N V L M N N V E gi7416967_Mouse_TAFI
79  V K A H L N V S R I P F N V L M N N V E BAB03402_Mouse

47  - - - - - Y N - - - - - 00002227Fa161_aa1
24  - - - - - Y N - - - - - 21489916_CPO
99  S V L E A Q - F D S R V - - R T T G H S CAB46991
99  D L I E Q Q T F N D T V S P R A S A S Y gi7416967_Mouse_TAFI
99  D L I E Q Q T F N D T V S P R A S A S Y BAB03402_Mouse

49  - - I Y H P M G E I Y E W M R E I S E K 00002227Fa161_aa1
26  - - I Y H P M G E I Y E W M R E I S E K 21489916_CPO
116 Y E K Y N N W E T I E A W T K Q V T S E CAB46991
119 Y E Q Y H S L N E I Y S W I E V I T E Q gi7416967_Mouse_TAFI
119 Y E Q Y H S L N E I Y S W I E V I T E Q BAB03402_Mouse

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ATTN DLT: HYS28

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67	<b>Y K E V V T Q H F L G V T Y E T H P I Y</b>	00002227Fa161_aa1
44	<b>Y K E V V T Q H F L G V T Y E T H P M Y</b>	21489916_CPO
136	<b>N P D L I S R T A I G T T F L G N N I Y</b>	CAB46991
139	<b>H P D M L Q K I Y I G S S F E K Y P L Y</b>	gi7416967_Mouse_TAFI
139	<b>H P D M L Q K I Y I G S S F E K Y P L Y</b>	BAB03402_Mouse
87	<b>Y L K I S Q P S G N P K K I I W M D C G</b>	00002227Fa161_aa1
64	<b>Y L K I S Q P S G N P K K I I W M D C G</b>	21489916_CPO
156	<b>L L K V - G K P G P N K P A I F M D C G</b>	CAB46991
159	<b>V L K V S G K E Q R I K N A I W I D C G</b>	gi7416967_Mouse_TAFI
159	<b>V L K V S G K E Q R I K N A I W I D C G</b>	BAB03402_Mouse
* . *		
107	<b>I H A R E W I A P A F C Q W F V K E I L</b>	00002227Fa161_aa1
84	<b>I H A R E W I A P A F C Q W F V K E I L</b>	21489916_CPO
175	<b>F H A R E W I S H A F C Q W F V R E A V</b>	CAB46991
179	<b>I H A R E W I S P A F C L W F I G Y V T</b>	gi7416967_Mouse_TAFI
179	<b>I H A R E W I S P A F C L W F I G Y V T</b>	BAB03402_Mouse
127	<b>Q N H K D N S R I R K L L R N L D F Y V</b>	00002227Fa161_aa1
104	<b>Q N H K D N S S I R K L L R N L D F Y V</b>	21489916_CPO
195	<b>L T Y G Y E S H M T E F L N K L D F Y V</b>	CAB46991
199	<b>Q F H G K E N L Y T R L L R H V D F Y I</b>	gi7416967_Mouse_TAFI
199	<b>Q F H G K E N L Y T R L L R H V D F Y I</b>	BAB03402_Mouse
. .		
147	<b>L P V L N I D G Y I Y T W T T D R L W R</b>	00002227Fa161_aa1
124	<b>L P V L N I D G Y I Y T W T T D R L W R</b>	21489916_CPO
215	<b>L P V L N I D G Y I Y T W T K N R M W R</b>	CAB46991
219	<b>M P V M N V D G Y D Y T W K K N R M W R</b>	gi7416967_Mouse_TAFI
219	<b>M P V M N V D G Y D Y T W K K N R M W R</b>	BAB03402_Mouse
. .		
167	<b>K S R S P H N N G T C F G T D L N R N F</b>	00002227Fa161_aa1
144	<b>K S R S P H N N G T C F G T D L N R N F</b>	21489916_CPO
235	<b>K T R S T N A G T T C I G T D P N R N F</b>	CAB46991
239	<b>K N R S A H K N N R C V G T D L N R N F</b>	gi7416967_Mouse_TAFI
239	<b>K N R S A H K N N R C V G T D L N R N F</b>	BAB03402_Mouse
187	<b>N A S - W C S I G A S R N C Q D Q T F C</b>	00002227Fa161_aa1
164	<b>N A S - W C S I G A S R N C Q D Q T F C</b>	21489916_CPO
255	<b>D A G - W C T T G A S T D P C D E T Y C</b>	CAB46991
259	<b>A S K H W C E K G A S S S S C S E T Y C</b>	gi7416967_Mouse_TAFI
259	<b>A S K H W C E K G A S S S S C S E T Y C</b>	BAB03402_Mouse

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206	<b>G T G P V S E P E T K A V A S F I E S K</b>	00002227Fa161_aa1
183	G T G P V S E P E T K A V A S F I E S K	21489916_CPO
274	G S A A E S E <b>K</b> E T K A <b>L</b> A D F I R N N	CAB46991
279	G L Y <b>P</b> E S E P E V K A V A D F L R R N	gi7416967_Mouse_TAFI
279	G L Y <b>P</b> E S E P E V K A V A D F L R R N	BAB03402_Mouse
* . .		
226	<b>K D D I L C F L T M H S Y G Q L I L T P</b>	00002227Fa161_aa1
203	K D D I L C F L T M H S Y G Q L I L T P	21489916_CPO
294	L S S I K A Y L T <b>I</b> H S Y S Q M I L Y P	CAB46991
299	I <b>D</b> H I K A Y I S M H S Y S Q Q I L F P	gi7416967_Mouse_TAFI
299	I <b>D</b> H I K A Y I S M H S Y S Q Q I L F P	BAB03402_Mouse
.		
246	<b>Y G Y T K N K S S N H P E M I Q V G Q K</b>	00002227Fa161_aa1
223	Y G Y T K N K S S N H P E M I Q V G Q K	21489916_CPO
314	Y S Y D Y K L P E N N A E L N N L A K A	CAB46991
319	Y S Y N R S <b>K S</b> K D H E E L S L V A S E	gi7416967_Mouse_TAFI
319	Y S Y N R S <b>K S</b> K D H E E L S L V A S E	BAB03402_Mouse
.		
266	<b>A A N A L K A K Y G - T N Y R V G S S A</b>	00002227Fa161_aa1
243	A A N A L K A K Y G - T N Y R V G S S A	21489916_CPO
334	A V K E L A T L Y G - T K Y T Y G P G A	CAB46991
339	A V R A I E S I N K N T R Y T H G S G S	gi7416967_Mouse_TAFI
339	A V R A I E S I N K N T R Y T H G S G S	BAB03402_Mouse
.		
285	<b>D I L Y A S S G S S R D W A R D I G I P</b>	00002227Fa161_aa1
262	D I L Y A S S G S S R D W A R D I G I P	21489916_CPO
353	T T I Y P A A G G S D D W A Y D Q G I K	CAB46991
359	E S L Y L A P G G S D D W I Y D L G I K	gi7416967_Mouse_TAFI
359	E S L Y L A P G G S D D W I Y D L G I K	BAB03402_Mouse
.		
305	<b>F S Y T F E L R D S G T Y G F V L P E A</b>	00002227Fa161_aa1
282	F S Y T F E L R D S G T Y G F V L P E A	21489916_CPO
373	Y S F T F E L R D K G R Y G F I L P E S	CAB46991
379	Y S F T I E L R D T G R Y G F L L P E R	gi7416967_Mouse_TAFI
379	Y S F T I E L R D T G R Y G F L L P E R	BAB03402_Mouse
.		
325	<b>Q I Q P T C E E T M E A V L S V L D D V</b>	00002227Fa161_aa1
302	Q I Q P T C E E T M E A V L S V L D D V	21489916_CPO
393	Q I Q A T C E E T M L A I K Y V T N Y V	CAB46991
399	Y I K P T C A E A L A A I S K I V W H V	gi7416967_Mouse_TAFI
399	Y I K P T C A E A L A A I S K I V W H V	BAB03402_Mouse

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345	Y A K H W H S D S A G R V T S A T M L L	00002227Fa161_aa1
322	Y A K H W H S D S A G R V T S A T M L L	21489916_CPO
413	L G H L	CAB46991
419	I R N T	gi7416967_Mouse_TAFI
419	I R N T	BAB03402_Mouse
365	G L L V S C M S L L	00002227Fa161_aa1
342	G L L V S C M S L L	21489916_CPO
416		CAB46991
422		gi7416967_Mouse_TAFI
422		BAB03402_Mouse

Decoration 'Decoration #1': Box residues that match  
00002227Fa161\_aa1 exactly.

#### KEY

For convenience, all numbering refers to the numbering of 00002227Fa161\_aa1.

**Bolded Residues** (Y50 through E332) = Zinc carboxypeptidase Pfam signature (PF00246).

**Barred Residues** (K99 through F121) = Residues below the bar comprise a PROSITE Carboxypept\_Zn\_1 signature (PS00132)  
PS00132 signature = [PK]-x-[LIVMFY]-x-[LIVMFY]-x(4)-H-[STAG]-x-E-x-[LIVM]-[STAG]-x(6)-[LIVMFYTA]  
(<http://www.expasy.ch/prosite>).

**Asteriks (\*)** = Residues indicated by an asterisk are those involved in the coordination of the active site zinc atom and are highly conserved amongst members of the CPA/B carboxypeptidase subfamily.  
(JBC 2002; 277 pp. 14954-64)

**Dots (.)** = Residues indicated by a dot are those that are important for substrate binding and catalysis and are highly conserved amongst members of the CPA/B carboxypeptidase subfamily.  
(JBC 2002; 277 pp. 14954-64)